

# B Identification Products

## For Wire & Cable



A comprehensive line of heat shrinkable sleeves, labels, tie-on cable markers to meet a broad range of needs including UL, CSA and Mil-Spec requirements, for a variety of Applications. WOER's identification sleeves are Heat shrinkable marking sleeves for wire and cable identification. Made from permanent, flame retarded, radiation crosslinked heat shrinkable polyolefin. This identification sleeves are permanent immediately after printing and remain legible even when exposed to abrasion, aggressive cleaning solvents.

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## AMS

### Military Identification Sleeves

**Description:** AMS marker sleeves are designed to meet the wire and cable permanent marking needs. It is made of durable and flame retardant heat shrinkable polyolefin, and radiation cross-linked by high energy electronic beam.

**Standard:** AMS meets AMS-DTL-23053/5 Class 1&3, SAE-AS 81531, MIL-STD-202F/Method 215J, UL224, VW-1, RoHS.

### Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound
Application range	Military industry; Aerospace & defense; Marine;
Operating temperature range	-55~+135°C
Minimum recovery temperature	+135°C
Maximum storage temperature	+50°C
Shrink ratio	2:1, 3:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Either Thermal transfer printer or Laser printer is OK.
Recommended Ribbons	WO-80500BK resin ribbon, Black

**Dimensions**

**Shrink ratio-2X**

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
AMS-M-2X-1.6-	2.00 ± 0.20	3.7 ± 0.3	0.48 ± 0.10	≤ 0.79	0.45 ± 0.06
AMS-M-2X-2.4-	2.79 ± 0.20	5.0 ± 0.3	0.48 ± 0.10	≤ 1.18	0.49 ± 0.06
AMS-M-2X-3.2-	3.64 ± 0.23	6.3 ± 0.4	0.48 ± 0.10	≤ 1.59	0.51 ± 0.06
AMS-M-2X-4.8-	5.26 ± 0.25	8.9 ± 0.4	0.49 ± 0.10	≤ 2.36	0.54 ± 0.06
AMS-M-2X-6.4-	6.92 ± 0.28	11.5 ± 0.4	0.50 ± 0.10	≤ 3.18	0.56 ± 0.06
AMS-M-2X-9.5-	10.2 ± 0.32	16.7 ± 0.5	0.51 ± 0.11	≤ 4.75	0.59 ± 0.06
AMS-M-2X-12.7-	13.5 ± 0.36	21.8 ± 0.6	0.52 ± 0.11	≤ 6.35	0.60 ± 0.07
AMS-M-2X-19-	20.1 ± 0.40	32.2 ± 0.6	0.53 ± 0.11	≤ 9.53	0.62 ± 0.07
AMS-M-2X-25-	26.7 ± 0.45	42.5 ± 0.7	0.55 ± 0.12	≤ 12.7	0.63 ± 0.07
AMS-M-2X-38-	39.8 ± 0.51	63.2 ± 0.8	0.57 ± 0.12	≤ 19.1	0.64 ± 0.07
AMS-M-2X-51-	53.0 ± 0.56	83.9 ± 0.9	0.58 ± 0.13	≤ 25.4	0.64 ± 0.08
AMS-M-2X-76-	79.4 ± 0.56	125.3 ± 1.0	0.59 ± 0.13	≤ 38.1	0.64 ± 0.09

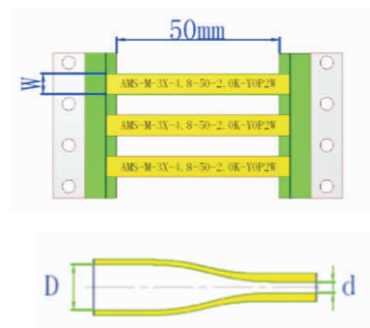
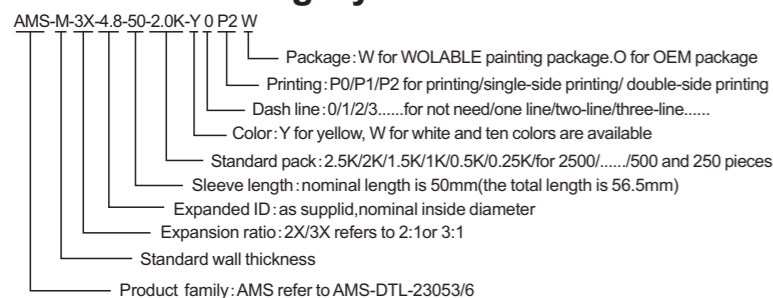
**Shrink ratio-3X**

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (D)	Single Wall Thickness
AMS-M-3X-1.6-	2.00 ± 0.20	3.7 ± 0.3	0.47 ± 0.10	≤ 0.53	0.52 ± 0.06
AMS-M-3X-2.4-	2.79 ± 0.20	5.0 ± 0.3	0.47 ± 0.10	≤ 0.79	0.57 ± 0.06
AMS-M-3X-3.2-	3.64 ± 0.23	6.3 ± 0.4	0.48 ± 0.10	≤ 1.06	0.61 ± 0.06
AMS-M-3X-4.8-	5.26 ± 0.25	8.9 ± 0.4	0.49 ± 0.10	≤ 1.59	0.67 ± 0.06
AMS-M-3X-6.4-	6.92 ± 0.28	11.5 ± 0.4	0.50 ± 0.10	≤ 2.13	0.71 ± 0.06
AMS-M-3X-9.5-	10.2 ± 0.32	16.7 ± 0.5	0.52 ± 0.11	≤ 3.18	0.77 ± 0.06
AMS-M-3X-12.7-	13.5 ± 0.36	21.8 ± 0.6	0.53 ± 0.11	≤ 4.23	0.80 ± 0.07
AMS-M-3X-19-	20.1 ± 0.40	32.2 ± 0.6	0.55 ± 0.11	≤ 6.35	0.84 ± 0.07
AMS-M-3X-25-	26.7 ± 0.45	42.5 ± 0.7	0.565 ± 0.12	≤ 8.47	0.86 ± 0.07
AMS-M-3X-38-	39.8 ± 0.51	63.2 ± 0.8	0.57 ± 0.12	≤ 12.9	0.89 ± 0.07
AMS-M-3X-51-	53.0 ± 0.56	83.9 ± 0.9	0.57 ± 0.12	≤ 17.2	0.90 ± 0.08
AMS-M-3X-76-	79.4 ± 0.56	125.3 ± 1.0	0.57 ± 0.13	≤ 25.8	0.92 ± 0.09

**Package information**

Ordering Size (AMS-M-2X/3X)	Ladder Format Type		Continuous Type	
	A&B-Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)	B-Plastic reel Packing (m/reel)	
Φ 1.6	2500	50	25	
Φ 2.4	2500	50	25	
Φ 3.2	2000	100	25	
Φ 4.8	2000	100	25	
Φ 6.4	2000	100	25	
Φ 9.5	1000	100	25	
Φ 12.7	1000	100	25	
Φ 19	500	100	25	
Φ 25	500	100	25	
Φ 38	500	50	25	
Φ 51	250	50	25	
Φ 76	250	50	25	

**Part Numbering System**



**RSFR**

**Heat Shrinkable Identification Sleeves**

**Description:** RSFR marker sleeve is a flattened, heat-shrinkable tubing intended for wire and cable harness identification. It can also be used for applications where limited fire hazard characteristics are necessary. When RSFR is printed with Woer recommended printers and ink ribbons, the marks remain legible, durable, even when exposed to abrasion, aggressive cleaning solvents, and industrial fluids.

**Standard:** SAE-AS 81531, MIL-STD-202F/Method 215J, UL224, RoHS etc

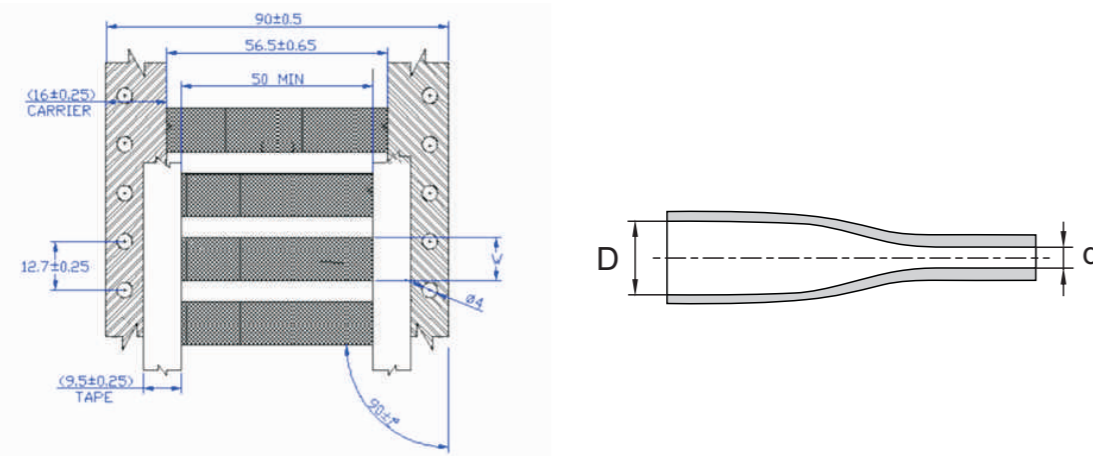
**Features**

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound containing no halogens or cadmium in the formulation.
Application range	commercial , Industrial environment
Operating temperature range	-55~+125°C
Minimum recovery temperature	+125°C
Maximum storage temperature	+50°C
Shrink ratio	2:1, 3:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Thermal transfer printer
Recommended Ribbons	N85 resin ribbon, Black, 100mm(width)*300m(length)

**Physic performance**

Property	Unit	Testing Requirement	WOER Results
Tensile strength	MPa	10.3	14.3
Ultimate elongation	%	200	330
Low temperature flexibility 4 hours at -55±1°C	-	No cracking	Pass(no cracking)
Dielectric strength	Kv/mm	15.7kv/mm	20kv/mm
Volume Resistivity	Ohm-cm	10 <sup>14</sup> minimum	2.0 × 10 <sup>14</sup>
Corrosive effect	-	No corrosive	pass
Heat aging	-	168 hours at 158 ± 2°C	Pass(no cracking, print is legible)
Print performance	Rubs	SAE-AS 81531	Pass(legible after 100 rubs)
	Strokes	MIL-STD-202F	Pass(legible after 100 Strokes)

**Part Numbering System**



RSFR-M-3X-4.8-50-2.0K-Y 0 P2 W

- Package: W for WOLABLE painting package. O for OEM package
- Printing: PO/P1/P2 for printing/single-side printing/ double-side printing.
- Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....
- Color: Y for yellow, W for white and ten colors are available
- Standard pack: 2.5K/2K/1.5K/1K/0.5K/0.25K for 2500/...../500 and 250 pieces
- Sleeve length: nominal length is 50mm(the total length is 56.5mm)
- Expanded ID: as supplid, nominal inside diameter
- Expansion ratio: 2X/3X refers to 2:1 or 3:1
- Standard wall thickness
- Product family: RSFR refers to UL 224

Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.

**Dimensions**

**Shrink ratio-2X**

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
RSFR-M-2X-1.6-	2.00 ± 0.20	3.7 ± 0.3	0.48 ± 0.10	≤ 0.79	0.45 ± 0.06
RSFR-M-2X-2.4-	2.79 ± 0.20	5.0 ± 0.3	0.48 ± 0.10	≤ 1.18	0.49 ± 0.06
RSFR-M-2X-3.2-	3.64 ± 0.23	6.3 ± 0.4	0.48 ± 0.10	≤ 1.59	0.51 ± 0.06
RSFR-M-2X-4.8-	5.26 ± 0.25	8.9 ± 0.4	0.49 ± 0.10	≤ 2.36	0.54 ± 0.06
RSFR-M-2X-6.4-	6.92 ± 0.28	11.5 ± 0.4	0.50 ± 0.10	≤ 3.18	0.56 ± 0.06
RSFR-M-2X-9.5-	10.2 ± 0.32	16.7 ± 0.5	0.51 ± 0.11	≤ 4.75	0.59 ± 0.06
RSFR-M-2X-12.7-	13.5 ± 0.36	21.8 ± 0.6	0.52 ± 0.11	≤ 6.35	0.60 ± 0.07
RSFR-M-2X-19-	20.1 ± 0.40	32.2 ± 0.6	0.53 ± 0.11	≤ 9.53	0.62 ± 0.07
RSFR-M-2X-25-	26.7 ± 0.45	42.5 ± 0.7	0.55 ± 0.12	≤ 12.7	0.63 ± 0.07
RSFR-M-2X-38-	39.8 ± 0.51	63.2 ± 0.8	0.57 ± 0.12	≤ 19.1	0.64 ± 0.07
RSFR-M-2X-51-	53.0 ± 0.56	83.9 ± 0.9	0.58 ± 0.13	≤ 25.4	0.64 ± 0.08
RSFR-M-2X-76-	79.4 ± 0.56	125.3 ± 1.0	0.59 ± 0.13	≤ 38.1	0.64 ± 0.09

**Shrink ratio-3X**

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (D)	Single Wall Thickness
RSFR-M-3X-1.6-	2.00 ± 0.20	3.7 ± 0.3	0.47 ± 0.10	≤ 0.53	0.52 ± 0.06
RSFR-M-3X-2.4-	2.79 ± 0.20	5.0 ± 0.3	0.47 ± 0.10	≤ 0.79	0.57 ± 0.06
RSFR-M-3X-3.2-	3.64 ± 0.23	6.3 ± 0.4	0.48 ± 0.10	≤ 1.06	0.61 ± 0.06
RSFR-M-3X-4.8-	5.26 ± 0.25	8.9 ± 0.4	0.49 ± 0.10	≤ 1.59	0.67 ± 0.06
RSFR-M-3X-6.4-	6.92 ± 0.28	11.5 ± 0.4	0.50 ± 0.10	≤ 2.13	0.71 ± 0.06
RSFR-M-3X-9.5-	10.2 ± 0.32	16.7 ± 0.5	0.52 ± 0.11	≤ 3.18	0.77 ± 0.06
RSFR-M-3X-12.7-	13.5 ± 0.36	21.8 ± 0.6	0.53 ± 0.11	≤ 4.23	0.80 ± 0.07
RSFR-M-3X-19-	20.1 ± 0.40	32.2 ± 0.6	0.55 ± 0.11	≤ 6.35	0.84 ± 0.07
RSFR-M-3X-25-	26.7 ± 0.45	42.5 ± 0.7	0.565 ± 0.12	≤ 8.47	0.86 ± 0.07
RSFR-M-3X-38-	39.8 ± 0.51	63.2 ± 0.8	0.57 ± 0.12	≤ 12.9	0.89 ± 0.07
RSFR-M-3X-51-	53.0 ± 0.56	83.9 ± 0.9	0.57 ± 0.12	≤ 17.2	0.90 ± 0.08
RSFR-M-3X-76-	79.4 ± 0.56	125.3 ± 1.0	0.57 ± 0.13	≤ 25.8	0.92 ± 0.09

**Package Information**

Ordering Size (RSFR-M-2X/3X)	Ladder Format Type	
	Small Box Packing (PCS/Box)	Continuous Type A-Paper reel Packing (m/reel)
Φ 1.6	2500	50
Φ 2.4	2500	50
Φ 3.2	2000	100
Φ 4.8	2000	100
Φ 6.4	2000	100
Φ 9.5	1000	100
Φ 12.7	1000	100
Φ 19	500	100
Φ 25	500	100
Φ 38	500	50
Φ 51	250	50
Φ 76	250	50



# PSFR

## High-temperature, Heat Shrinkable Identification Sleeves

**Description:** PSFR marker sleeve is flattened, heat-shrinkable tubing designed for wire and cable identification in high temperature applications or where extreme resistance to fuels, lubricants and cleaning solvents is required. When PSFR is printed with Woer recommended printers and ink ribbon, the marks remain legible, durable, even when exposed to abrasion, aggressive cleaning solvents, and industrial fluids.

**Standard :** AMS-DTL-23053/18, SAE-AS 81531, MIL-STD-202F/Method 215J, UL224, RoHS etc

### Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified PVDF
Application range	Aerospace, defense and mass transit industries.
Operating temperature range	-55~+225°C
Minimum recovery temperature	+200°C
Maximum storage temperature	+50°C
Shrink ratio	2:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Thermal transfer printer
Recommended Ribbons	N95 resin ribbon, Black, 100mm(width)*300m(length)

### Dimensions

Part Number	As Supplied (mm)	After Recovery(mm)	
	ID (D)	ID (d)	Single Wall Thickness
PSFR-2X-2.4-*	≥2.4	≤1.2	0.38 ± 0.08
PSFR-2X-3.2-*	≥3.2	≤1.6	0.38 ± 0.08
PSFR-2X-4.8-*	≥4.8	≤2.4	0.38 ± 0.08
PSFR-2X-6.4-*	≥6.4	≤3.2	0.38 ± 0.08
PSFR-2X-9.5-*	≥9.5	≤4.8	0.38 ± 0.08
PSFR-2X-12.7-*	≥12.7	≤6.4	0.38 ± 0.08
PSFR-2X-19-*	≥19.0	≤9.5	0.38 ± 0.08
PSFR-2X-25-*	≥25.0	≤12.7	0.43 ± 0.10
PSFR-2X-38-*	≥38.0	≤19.0	0.43 ± 0.10
PSFR-2X-51-*	≥51.0	≤25.4	0.58 ± 0.10

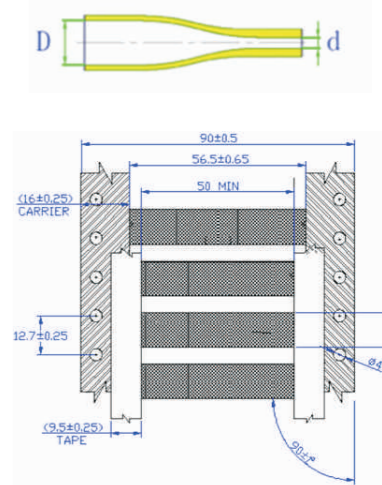
### Package Information

Ordering Size (PSFR-M-2X)	Ladder Format Type	Continuous Type
	Small Box Packing (PCS/Box)	Paper reel Packing (m/reel)
Φ2.4	2500	50
Φ3.2	2000	100
Φ4.8	2000	100
Φ6.4	2000	100
Φ9.5	1000	100
Φ12.7	1000	100
Φ19	500	100
Φ25	500	100
Φ38	500	50
Φ51	250	50

### Part Numbering System

PSFR-M-2X-4.8-50-2.0K-Y 0 P2 W

- Package: W for WOLABLE painting package. O for OEM package
- Printing: PO/P1/P2 for printing/single-side printing/ double-side printing.
- Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....
- Color: Y for yellow, W for white and ten colors are available
- Standard pack: 2.5K/2K/1.5K/1K/0.5K/0.25K/for 2500/...../500 and 250 pieces
- Sleeve length: nominal length is 50mm(the total length is 56.5mm)
- Expanded ID: as supplied, nominal inside diameter
- Expansion ratio: 2X refers to 2:1
- Standard wall thickness
- Product family: PVDF



Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.



# HMS

## Diesel Resistant Identification Sleeves

**Description:** HMS marker sleeves are used to identify wires and cables where exposure to organic fluids, especially diesel oils, for long period of high of temperatures.

**Standard :** HMS meets AMS-DTL-23053/6 Class 1, NF F 00608 Categories A&H, SAE-AS 81531, MIL-STD-202F/Method 215J, RoHS etc

### Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound
Application range	Military industry; Aerospace & defense; Marine;
Operating temperature range	-55~+135°C
Minimum recovery temperature	+135°C
Maximum storage temperature	+50°C
Shrink ratio	3:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Either Thermal transfer printer or Laser printer is OK.
Recommended Ribbons	N85 resin ribbon, Black, 100mm(width)*300m(length)

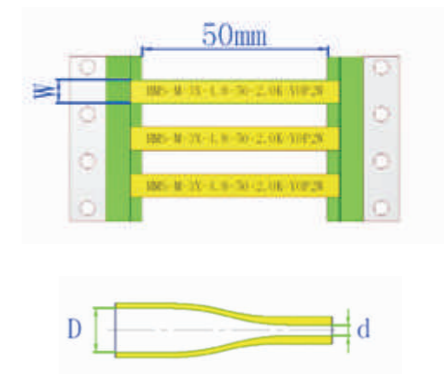
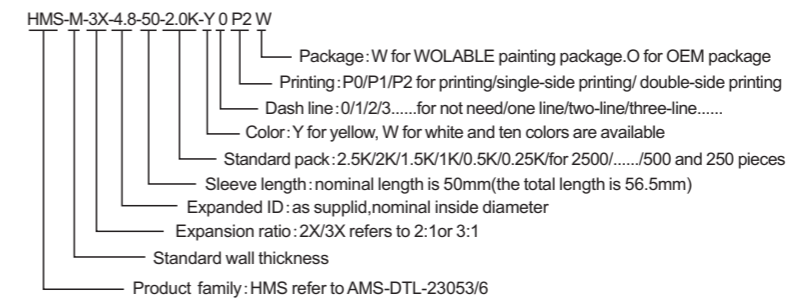
### Dimensions

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
HMS-M-3X-2.4-	2.79 ± 0.20	5.0 ± 0.3	0.47 ± 0.10	≤ 0.79	0.57 ± 0.06
HMS-M-3X-3.2-	3.64 ± 0.23	6.3 ± 0.4	0.48 ± 0.10	≤ 1.06	0.61 ± 0.06
HMS-M-3X-4.8-	5.26 ± 0.25	8.9 ± 0.4	0.49 ± 0.10	≤ 1.59	0.67 ± 0.06
HMS-M-3X-6.4-	6.92 ± 0.28	11.5 ± 0.4	0.50 ± 0.10	≤ 2.13	0.71 ± 0.06
HMS-M-3X-9.5-	10.2 ± 0.32	16.7 ± 0.5	0.52 ± 0.11	≤ 3.18	0.77 ± 0.06
HMS-M-3X-12.7-	13.5 ± 0.36	21.8 ± 0.6	0.53 ± 0.11	≤ 4.23	0.80 ± 0.07
HMS-M-3X-19-	20.1 ± 0.40	32.2 ± 0.6	0.55 ± 0.11	≤ 6.35	0.84 ± 0.07
HMS-M-3X-25-	26.7 ± 0.45	42.5 ± 0.7	0.56 ± 0.12	≤ 8.47	0.86 ± 0.07
HMS-M-3X-38-	39.8 ± 0.51	63.2 ± 0.8	0.57 ± 0.12	≤ 12.9	0.89 ± 0.07

### Package Information

Ordering Size (HMS-M-3X)	Ladder Format Type	Continuous Type	
	A&B-Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)	B-Plastic reel Packing (m/reel)
Φ2.4	2500	50	25
Φ3.2	2000	100	25
Φ4.8	2000	100	25
Φ6.4	2000	100	25
Φ9.5	1000	100	25
Φ12.7	1000	100	25
Φ19	500	100	25
Φ25	500	100	25
Φ38	500	50	25

### Part Numbering System



Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.



# HNF

## Halogen Free Low Smoke Low Hazard Identification Sleeves

**Description:** HNF marker sleeve is a flattened, heat-shrinkable tubing designed for wire and cable harness identification. It can also be used for applications where limited fire hazard characteristics are necessary. The zero halogen material coupled with low smoke and low toxic fume emissions make this product perfectly used in enclosed spaces such as mass transit, marine and industrial installations.

**Standard :** NF F16-101, DIN5510-2, BS 6853, SAE-AS 81531, MIL-STD-202F/Method 215J, RoHS etc

### Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound containing no halogens or cadmium in the formulation.
Application range	Industrial environment ; Rail & mass transit; Aerospace & defense; Marine;
Operating temperature range	-55~+125°C
Minimum recovery temperature	+115°C
Maximum storage temperature	+40°C
Shrink ratio	2:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Thermal transfer printer
Recommended Ribbons	N85 resin ribbon, Black, 100mm(width)*300m(length)

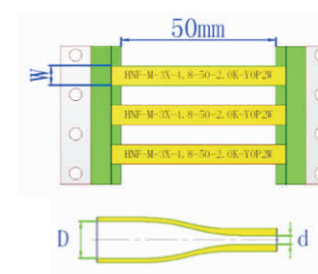
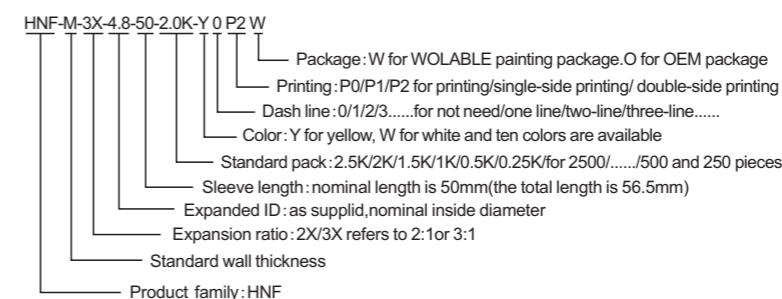
### Dimensions

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
HNF-M-2X-2.4-	2.79 ± 0.20	5.0 ± 0.3	0.48 ± 0.10	≤ 1.18	0.49 ± 0.06
HNF-M-2X-3.2-	3.64 ± 0.23	6.3 ± 0.4	0.48 ± 0.10	≤ 1.59	0.51 ± 0.06
HNF-M-2X-4.8-	5.26 ± 0.25	8.9 ± 0.4	0.49 ± 0.10	≤ 2.36	0.54 ± 0.06
HNF-M-2X-6.4-	6.92 ± 0.28	11.5 ± 0.4	0.50 ± 0.10	≤ 3.18	0.56 ± 0.06
HNF-M-2X-9.5-	10.2 ± 0.32	16.7 ± 0.5	0.51 ± 0.11	≤ 4.75	0.59 ± 0.06
HNF-M-2X-12.7-	13.5 ± 0.36	21.8 ± 0.6	0.52 ± 0.11	≤ 6.35	0.60 ± 0.07
HNF-M-2X-19-	20.1 ± 0.40	32.2 ± 0.6	0.53 ± 0.11	≤ 9.53	0.62 ± 0.07
HNF-M-2X-25-	26.7 ± 0.45	42.5 ± 0.7	0.55 ± 0.12	≤ 12.7	0.63 ± 0.07
HNF-M-2X-38-	39.8 ± 0.51	63.2 ± 0.8	0.57 ± 0.12	≤ 19.1	0.64 ± 0.07

### Package Information

Ordering Size (HNF-M-2X)	Ladder Format Type	Continuous Type	
	A&B-Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)	B-Plastic reel Packing (m/reel)
Φ2.4	2500	50	25
Φ3.2	2000	100	25
Φ4.8	2000	100	25
Φ6.4	2000	100	25
Φ9.5	1000	100	25
Φ12.7	1000	100	25
Φ19	500	100	25
Φ25	500	100	25
Φ38	500	50	25

### Part Numbering System



Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.



# PUR

## Identification Tags

**Description:** The PUR cable markers are made of a thermoplastic polyurethane material, which is a halogen free, flame retardant, hydrolysis and micro organism resistant material. The raw material fulfills UL94-V0. For identification of cables and wires, the markers are supplied on rolls for thermal transfer print.

**Use :** Markers can be easily removed from the carrier, and applied to cables and wire bundles using cable dies. Thermal transfer printer and WO-80500BK ribbon are recommended for meeting printing performance requirements of SAE AS 81531 and MIL-STD-202F.

### Specification and size

Order Code	Color	Pack size (pcs/coil)	Marker high (mm)	Marker length (mm)
PUR-M-4H-10-60-1K-W	White	1000	10	60
PUR-M-4H-15-75-1K-W	White	1000	15	75
PUR-M-4H-25-75-0.5K-W	White	500	25	75
PUR-M-4H-10-60-1K-BL	Black	1000	10	60
PUR-M-4H-15-75-1K-BL	Black	1000	15	75
PUR-M-4H-25-75-0.5K-BL	Black	500	25	75
PUR-M-4H-10-60-1K-Y	Yellow	1000	10	60
PUR-M-4H-15-75-1K-Y	Yellow	1000	15	75
PUR-M-4H-25-75-0.5K-Y	Yellow	500	25	75
PUR-M-4H-10-60-1K-R	Red	1000	10	60
PUR-M-4H-15-75-1K-R	Red	1000	15	75
PUR-M-4H-25-75-0.5K-R	Red	500	25	75

### Physic Performance

Properties	Test Method	Typical value
Hardness	DIN 53505	58 Shore D
Density	DIN 53475	1.27g/cm <sup>3</sup>
Tensile strength	DIN 53504	30MPa
Ultimate elongation	DIN 53504	400%
Stress at 20% elongation	DIN 53504	13MPa
Stress at 100% elongation	DIN 53504	19MPa
Stress at 300% elongation	DIN 53504	33MPa
Tear Strength	DIN 53515	110N/mm
Abrasion Loss	DIN 53516	30 mm <sup>3</sup>
Compression set at room temperature	DIN EN ISO 815	30%
Compression set at 70°C	DIN EN ISO 815	45%
Notched impact strength (Charpy) +23°C	DIN EN ISO 179	50 kJ/m <sup>2</sup>



# RSFR / AMS / HMS / HNF

## Identification Tags“Ladder Type” Thermal transfer

**Description:** According to the structure of label card, the identification tag is made of environment-friendly polyolefin material by means of bombardment and cross-link of high energy electron bunch.

They are mainly applied in the domains such as high-trials, subways, MU train, nuclear power station, airplane and space shuttles where the wide-diameter cable and bundle labels with high reliability are required to applied, especially in severe environment.

**Use :** Markers can be easily removed from the carrier, and applied to cables and wire bundles using cable dies. Thermal transfer printer and WO-80500BK ribbon are recommended for meeting printing performance requirements of SAE AS 81531 and MIL-STD-202F.

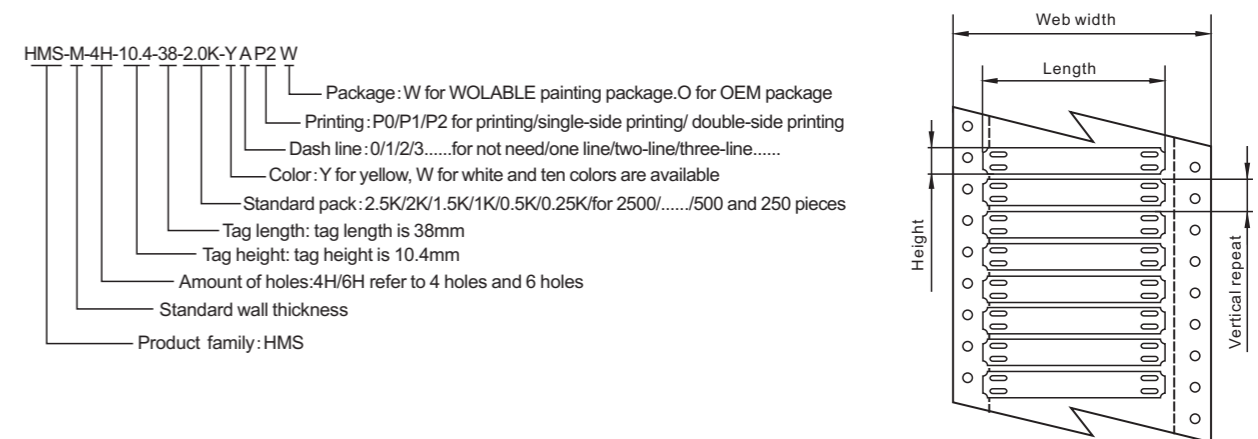
### Physic performance

Properties	AMS	HMS	HNF	RSFR	Test Method
Tensile strength (MPa)	≥10.3	≥13	≥10.3	≥10.3	ASTM D2671
Tensile strength after aging (MPa)	≥6.9	≥11	≥6.9	≥6.9	ASTM D2671
Ultimate elongation after aging(%)	≥200	≥200	≥200	≥200	ASTM D2671
Ultimate elongation(%)	≥100	≥100	≥100	≥100	ASTM D2671
Voltage withstand(V)	2500 V,60s,Pass	2500 V,60s,Pass	2500 V,60s,Pass	2500 V,60s,Pass	UI224
Dielectric strength (MV/m)	≥19.7	≥19.7	≥19.7	≥19.7	ASTM D2671
	≥15.8	≥15.8	≥15.8	≥15.8	ASTM D2671
Volume resistivity(Ω · cm)	≥10 <sup>14</sup>	≥10 <sup>14</sup>	≥10 <sup>14</sup>	≥10 <sup>14</sup>	ASTM D2671
Water absorption(%)	≤0.5	≤0.5	≤1.0	≤1.0	ASTM D570
Corrosion	Pass	Pass	Pass	Pass	UL 224
Heat shock	No cracks , flowing or dripping	No cracks , flowing or dripping	No cracks , flowing or dripping	No cracks , flowing or dripping	UL 224
Low temperature flexibility	No cracks	No cracks	No cracks	No cracks	UL 224
Flammability	VW-1	VW-1	DIN5510-2 S3	60s self-extingish	UL 224; DIN5510-2
Smoke density Ao	NG	NG	0.17	NG	BS6853
Index of toxic fume R	NG	NG	0.56	NG	BS6853

### Specification and size

Order Code	Pack size (pcs/coil)	Marker high (mm)	Marker length (mm)
RSFR-4H-10.4-45-2K-W-B-P0-*	2000	10.4	45
RSFR-4H-10.4-53-2K-W-B-P0-*	2000	10.4	53
RSFR-4H-10.4-64-2K-W-B-P0-*	2000	10.4	64
RSFR-6H-10.4-76-2K-W-B-P0-*	2000	10.4	76
RSFR-6H-10.4-90-2K-W-B-P0-*	2000	10.4	90
RSFR-4H-12.0-102-2K-W-B-P0	2000	12.0	102
RSFR-4H-15.0-45-1.5K-W-B-P0	1500	15.0	45
RSFR-4H-15.0-53-1.5K-W-B-P0	1500	15.0	53
RSFR-4H-15.0-64-1.5K-W-B-P0	1500	15.0	64
RSFR-6H-15.0-76-1.5K-W-B-P0	1500	15.0	76
RSFR-6H-15.0-90-1.5K-W-B-P0	1500	15.0	90
RSFR-4H-20.3-45-1K-W-B-P0-*	1000	20.3	45
RSFR-4H-20.3-53-1K-W-B-P0-*	1000	20.3	53
RSFR-4H-20.3-64-1K-W-B-P0-*	1000	20.3	64
RSFR-6H-20.3-76-1K-W-B-P0-*	1000	20.3	76
RSFR-6H-20.3-90-1K-W-B- *-P0	1000	20.3	90
RSFR-4H-25.4-45-1K-W-B- *-P0	1000	25.4	45
RSFR-4H-25.4-53-1K-W-B- *-P0	1000	25.4	53
RSFR-4H-25.4-64-1K-W-B- *-P0	1000	25.4	64
RSFR-6H-25.4-76-1K-W-B- *-P0	1000	25.4	76
RSFR-6H-25.4-90-1K-W-B- *-P0	1000	25.4	90

### Part Numbering System







# WO-80500BK

## Ribbon Data Sheet

**Description&application:** WO-80500BK ( N85 ) — is an ultra- high durability black resin thermal transfer ribbon, tested and approved for use on WOER AMS-M, HMS-M, DIN-M and HNF-M wire marker sleeves as well as RSFR/AMS/HMS/HNF cable marker tags. For reliable print performance and durability, please use WOER recommended compatible printers.

### Characteristics

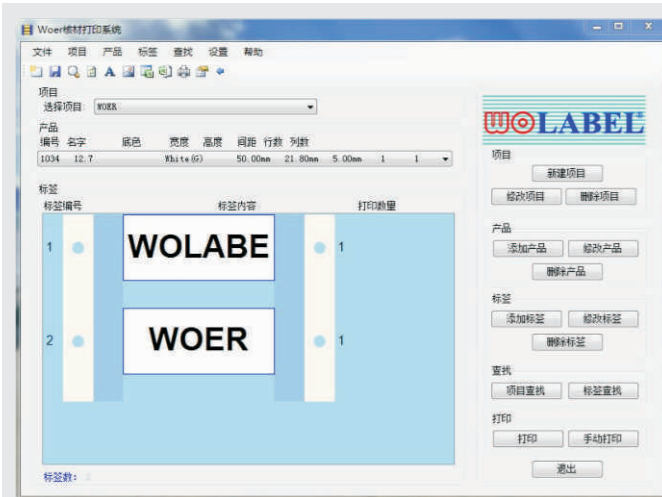
Manufacturer:	WOER
The max storage temperature:	-5°C-40°C
Operating temperature:	5°C-35°C
The delivery temperature:	-5°C -45°C
Complied standards:	SAE AS 81531 and MIL-STD-202F/215J
Ribbon width:	100 mm ; 60mm; 40mm
Ribbon length:	300 m
Printable area:	100% full area
Internal diameter:	25mm
Outside diameter:	62mm
Ink:	Resin
Standard color:	Black
Ribbon wind direction:	Ink exterior

### Recommended printers and materials

Properties	Typical value
Compatible printer:	WO-III,110-600DPI
	WO-III,110-300DPI
Compatible materials:	AMS, HMS, RSFR, HNF

# SOFTWARE

## WOLABEL-1/3 Software for Wire Marker and Label Printing



### Computer Configuration

#### Processor:

Intel Pentium CPU, 400MHz minimum

#### Ram:

64Mb minimum.

#### Operation system:

Windows 95/ 98/ 2000/ Me / NT/ XP.

#### Hardware:

250 Mb minimum.

#### Software:

Office 2000 or higher version can support data importing and exporting.

### Order Infor

#### Printing software:

WOLABEL-3/ENG (tri-users, English version)

WOLABEL-1/ENG (single-user, English version)

WOLABEL-3/CHN (tri-users, Chinese version)

WOLABEL-1/CHN (single-user, Chinese version)

**Description:** The customized printing software for WOLABEL wire marker and label printing is specially designed and developed industrial software by the R&D department of Shenzhen Woer Heat-shrinkable Material Co, Ltd.

The WOLABEL wire marker and label printing software can be used in industrial manufacturing environment. The easy and simple operation interface enables the customers to learn and master it fast. In the mean while, the printing fault ratio is controlled to the lowest.

This WOLABEL software offers English and Chinese operation interface with powerful editing functions to satisfy the needs of users.

The WOLABEL software can meet the printing requirements of labels for all kinds of cables and wires.

### Characteristics

WOLABEL software can save data to let user's repeat calling, edition. What is more, for the powerful design functions for label, this software not only can print commercial labels but also can print labels of cables and wires.

#### 1. Design Label

Self-defining function enable the users to set the sizes and styles of label as they will.

Insertion new label function enable the users to insert 1 to n pieces of labels between any ones.

Supports multi-line and parades editing.

Can set the sizes and styles of characters, with different to be edited and the length of characters can be set as users want.

Can insert logo or pictures.

#### 2. Set Printing

Default auto and manual printing.

Can repute printing for any times.

Can print multi-line and parades in one time.

#### 3. Data management

Easy to search and locate the saved labels, the user can edit them in the same time.

Can browse, display and edit a lot of labels on a same Interface.

The edited labels can be saved as a document then be called again.

Can get one or several parades of labels and are export from or import into an Excel.

Can recall or print dada for any times.

Auto array transposition for data in an Excel.